Massachusetts Department of Environmental Protection

Source Water Assessment and Protection (SWAP) Report

for

Housatonic Water Works Company

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- inventory land uses within the recharge areas of all public water supply sources;
- assess the susceptibility of drinking water sources to contamination from these land uses; and
- publicize the results to provide support for improved protection.

Susceptibility and Water Quality

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area.

A source's susceptibility to contamination does *not* imply poor water quality.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, disinfecting, filtering, or treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Actual water quality is best reflected by the results of regular water tests. To learn more about your water quality, refer to your water supplier's annual Consumer Confidence Reports.

Table 1: Public Water System Information

PWS Name	Housatonic Water Works Company
PWS Address	80 Maple Avenue
City/Town	Great Barrington
PWS ID Number	1113003
Local Contact	Mr. James J. Mercer
Phone Number	413-528-1780

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including storm runoff, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures.

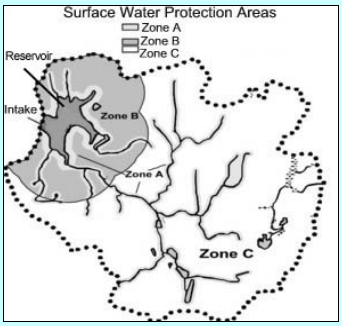
Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes the following sections:

1. Description of the Water System
2. Land Uses within Protection Areas
3. Source Water Protection
4. Appendices

What is a Watershed?

A watershed is the land area that catches and drains rainwater down-slope into a river, lake or reservoir. As water travels down from the watershed area it may carry contaminants from the watershed to the drinking water supply source. For protection purposes, watersheds are divided into protection Zones A, B and C.



Glossary
Protection Zones

Zone A: is the most critical for protection efforts. It is the area 400 feet from the edge of the reservoir and 200 feet from the edge of the tributaries (rivers and/ or streams) draining into it.

Zone B: is the area one-half mile from the edge of the reservoir but does not go beyond the outer edge of the watershed.

Zone C: is the remaining area in the watershed not designated as Zones A or B.

The attached map shows Zone A and your watershed boundary.

Section 1: Description of the Water System

Surface Water Source

System Susceptibility — *Moderate*

Source Name:	***Source ID***	*Susceptibility*
Long Pond	1113003-01S	Moderate

Housatonic Water Company is a small, private water company that supplies water to Housatonic, a village located in the northwestern section of the towns of Great Barrington, Stockbridge and West Stockbridge. Great Barrington is a moderately sized town in South Berkshire County that is historically an industrial, agricultural and residential community located along the Housatonic River valley in the heart of Berkshires. The Housatonic Water Company owns and operates Long Pong Reservoir (1113003-01S) located southwest of village of Housatonic. Long Pond has a surface area of 115 acres and a storage capacity of 263 million gallons. The watershed area is primarily wooded with minor agricultural activity. A small percentage, (2%) of the land use is low density residential and institutional. Please refer to the attached map to view the boundaries of the protective zones.

Water from the reservoir is treated through a slow sand filtration plant then disinfected prior to distribution. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report.

Section 2: Land Uses in the Protection Areas

Due to the nature of surface water supplies, the sources are considered highly vulnerable to potential contamination. Land uses and activities that are considered potential sources of contamination are listed in Table 2.

Key Land Uses and Protection Issues include:

1. Zone A activities
2. Residential
3. Institutional Use
4. Forestry/Watershed Management
5. Protection Planning
6. Agricultural Activities
7. Presence of Beavers in Watershed

The overall ranking of susceptibility to contamination for the system is moderate, based on the presence of moderate threat land uses within the water supply protection areas, as seen in Table 2.

1. Zone A activities – The Zone A for Long Pond is the land area 400 feet away from the shoreline. The reservoir appears to be spring fed as there are no feeder streams into the reservoir. The protective by-law for Great Barrington provides restrictions to activities on land within 500 feet of all water bodies in Town, including the reservoir. Massachusetts drinking water regulation (310 CMR 22.00 Drinking Water) regulates some of the activities allowed within the Zone

A. The greatest protection of the Zone A is for the water supplier to own or control the Zone A through Conservation Restrictions. The Housatonic Water Company owns approximately 30 acres or 5.5% of the land area in the watershed. According to the owners, the Water Company has rights to an area of 5 to 10 feet along the shoreline around the reservoir. There has been reported activity such as land clearing and recreational activity along the shoreline of the reservoir on land owned by a local conservation group. Only water supply activities are allowed in the Zone A. The Water Company does not own or control the entire Zone A area. However, many public water supplies were developed prior to the Department's regulations were promulgated and contain non-water supply activities.

Zone A Recommendations:

- ✓ Obtain a Right of First Refusal for acquiring the land within the watershed currently not owned by the Water Company.
- ✓ Consider purchasing the land or acquiring a conservation restriction on the land to minimize potential future threats.
- ✓ Use BMPs for the storage, use, and disposal of hazardous materials such as water supply chemicals and maintenance chemicals.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone A.
- ✓ Keep any new non water supply activities out of the Zone A.
- ✓ Contact property owners/conservation group to be sure they are aware they are within the Zone A and watershed. Be sure they understand that access to the water is prohibited and activities in the Zone A are restricted.

2. Residential Land Uses – Although the map indicates approximately 13 acres of the watershed consists of residential areas, some of that area is associated with an institutional use. None of these residential areas have public sewers, therefore on-site septic systems are used. The institution's septic system leach field is reportedly outside of the watershed. If managed improperly, activities associated with residential type areas can contribute to drinking water contamination. Common potential sources of contamination include:

- **Septic Systems** – Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the groundwater because septic systems lead to the ground. If septic systems fail or are not properly maintained they can be a potential source of microbial contamination.
- **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- **Heating Oil Storage** - If managed improperly, Underground and Aboveground Storage Tanks (UST and AST) can be potential sources of contamination due to leaks or spills of

Benefits of Source Protection

Source Protection helps protect public health and is also good for fiscal fitness:

- Protects drinking water quality at the source
- Reduces monitoring costs through the DEP Waiver Program
- Treatment can be reduced or avoided entirely, saving treatment costs
- Prevents costly contamination clean-up
- Preventing contamination saves costs on water purchases, and expensive new source development

Contact your regional DEP office for more information on Source Protection and the Waiver Program.

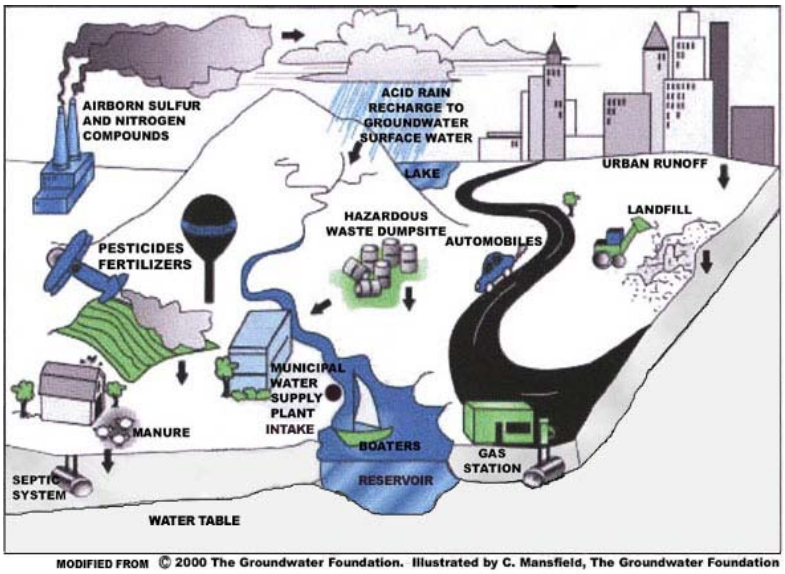


Figure 1: Sample watershed with examples of potential sources of contamination

the fuel oil they store.

- **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automotive leaks, maintenance, washing, or accidents.

Residential Land Use Recommendations:

✓ Educate residents on best management practices (BMPs) for protecting water supplies. Distribute the fact sheet "Residents Protect Drinking Water" available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.

✓ Consider negotiating a Right of First refusal agreement or conservation restrictions for land not currently owned by the Water Company.

3. Institutional Use – An area to the southwest of the reservoir is owned by a small economic research and educational institute. The land use is primarily a conference and residential facility. However, the facility operates a small publishing and printing operation for their materials. The main facilities are located within the watershed. According to the owner of the facility and the site plan, the septic system is southeast of the main facility, outside of the watershed. The site plan for the facility shows a leachfield within the watershed but no distribution piping to that existing leachfield.

The facilities within the watershed consist of residences, offices, power house, "stone mansion" and the main building which houses the printing facilities. There is also a small "Tea house" owned by the institute within the Zone A that is not used. The facility has recently removed all underground fuel oil storage tanks and replaced them with individual Aboveground Storage Tanks located within each building. In addition, the main building has a large boiler room with a floor drain that ties into the building foundation drain. The drain discharges above ground to an area northwest of the main building within the watershed. There are low-use roadways and parking at the facility. De-icing materials, automotive chemicals and other debris on roadways and in parking areas pose a minor threat to the watershed. The majority of the landholdings of the institute are forested. The Water Company communicates with the facility and it has a connection agreement to provide water to the facility in an emergency. The institute is a public water system, provides its own water and is in the process of developing a new well source.

Recommendations:

✓ Continue communication with the facility owners and monitor progress of the oil tank replacement at the facility.

✓ Consider negotiating a Right of First refusal agreement or conservation restrictions for land not currently owned by the Water Company.

✓ Work with local emergency response teams to ensure effective management of potential spills or responses at the facility. The Department discussed the need for an emergency response plan for the facility.

What are "BMPs?"

Best Management Practices (BMPs) are measures that are used to protect and improve surface water and groundwater quality. BMPs can be structural, such as oil & grease trap catch basins, nonstructural, such as hazardous waste collection days or managerial, such as employee training on proper disposal procedures.

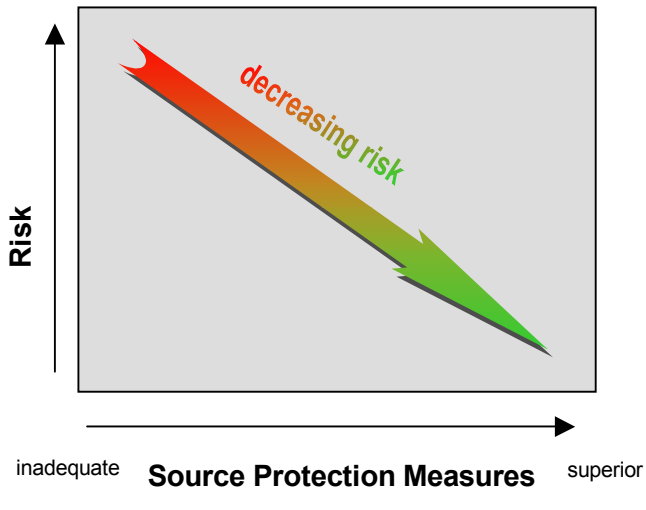


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

Potential Source of Contamination vs. Actual Contamination

The activities listed in Table 2 are those that typically use, produce, or store contaminants of concern, which, if managed improperly, are potential sources of contamination (PSC).

It is important to understand that a release may never occur from the potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking identified in Table 2. Many potential sources of contamination are regulated at the federal, state and/or local levels, to further reduce the risk.

Table 2: Land Use in the Watershed

For more information, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area

Land Uses	Quantity	Threat	Potential Contaminant Sources*
Agricultural			
Forestry Operation	1	L	Herbicides or pesticides, equipment maintenance materials: leaks, spills, or improper handling; road building
Haying of Fields	2	L	Equipment maintenance materials: leaks, spills, or improper handling
Commercial			
Printer	1	M	Printing inks and chemicals: spills, leaks, or improper handling or storage
Residential			
Fuel Oil Storage (at residences and Institute)	Numerous	M	Fuel oil: spills, leaks, or improper handling
Lawn Care/Gardening	4	M	Pesticides: over-application or improper storage and disposal
Septic Systems	4	M	Hazardous chemicals: microbial contaminants, and improper disposal
Miscellaneous			
Aquatic Wildlife	Historically	L	Microbial contaminants
Transportation Corridors	Low use	M	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling

Notes:

1. When specific potential contaminants are not known, typical potential contaminants or activities for that type of land use are listed. Facilities within the watershed may not contain all of these potential contaminant sources, may contain other potential contaminant sources, or may use Best Management Practices to prevent contaminants from reaching drinking water supplies.
2. For more information on regulated facilities, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area information about these potential sources of contamination.
3. For information about Oil or Hazardous Materials Sites in your protection areas, refer to Appendix C: Tier Classified Oil and/or Hazardous Material Sites.

*** THREAT RANKING** - The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater.

4. Forestry/Watershed Management – There are small scale forestry operations occurring within the watershed on privately held land. In addition, there is land being managed by a conservation group. Reportedly there has been some clearing of land to near the water's edge. Currently the Water Company does not have a watershed/forest management plan.

- ✓ Develop a Watershed Protection Plan and consider including abutting land owners in the plan to evaluate the need for a forest inventory and forest management plan specifically designed for watershed management. Surface Water Supply Protection plans are an eligible activity under the Source Water Protection Grant Program.
- ✓ Evaluate whether there are any impacts associated with current activities and determine what if any, management strategies are required for public access to the watershed.
- ✓ Continue to inspect the watershed regularly.
- ✓ Communicate with neighbors and inform them of the local by-law and the existing M.G.L. regarding water supplies.
- ✓ Clearly delineate and post Water Company land as necessary to protect the resource.

5. Protection Planning – The Town of Great Barrington has Watershed Protection Districts and by-laws that regulate activities near surface water bodies in town. The Town is in the process of reviewing those by-laws. A Watershed Protection Plan has not been prepared and submitted for approval to the Department's Boston office for content and procedures. These types of protection plans coordinate community efforts, identify protection strategies, establish a timeframe for implementation, and provide a forum for public education and outreach. The development of a successful Watershed Protection Plan is outlined in DEP's "Developing a Local Watershed Protection Plan" (see Appendix A for the full report).

Protection Planning Recommendations:

- ✓ Develop a Watershed Protection Plan. Consider applying for a Source Water Protection Grant and coordinate efforts with other water suppliers in Great Barrington to protect all public water supplies. Work within the community to establish a protection team, and refer them to http://mass.gov/dep/brp/dws/protect.htm for a copy of DEP's guidance, "Developing a Local Surface Water Supply Protection Plan".
- ✓ Coordinate efforts with local officials to compare local watershed protection controls with current MA Watershed Protection Regulation 310 CMR 22.20B & C). If there are no local controls or they do not meet the current regulation, encourage adoption of new controls. For more information on DEP land use controls see http://mass.gov/dep/brp/dws/protect.htm.
- ✓ If local controls do not regulate floordrains, be sure to include floordrain controls that meet 310 CMR 22.21(2).

6. Agricultural Activities – Crop lands (hayfields) make up about 9% in the watershed of Long Pond. Although pesticides and fertilizers often are not utilized on hay fields, if they are, they have the potential to contaminate a drinking water source if improperly stored, applied, or disposed. Machinery used for harvest or maintenance of the fields can leak oils and fluids that can potentially contaminate the water supply.

Agricultural Activities Recommendation:

- ✓ Work with landowners in your protection areas to make them aware of your water supply and to encourage the use of a US Natural Resources Conservation Service farm plan to protect water supplies. Refer to http://www.nrcs.usda.

Top 5 Reasons to Develop a Local Surface Water Protection Plan

❶ Reduces Risk to Human Health

❷ Cost Effective! Reduces or Eliminates Costs Associated With:

- Increased monitoring and treatment
- Water supply clean up and remediation
- Replacing a water supply
- Purchasing water

❸ Supports municipal bylaws, making them less likely to be challenged

❹ Ensures clean drinking water supplies for future generations

❺ Enhances real estate values – clean drinking water is a local amenity. A community known for its great drinking water in a place people want to live and businesses want to locate.

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

gov . Natural Resource Conservation Service Centers: Berkshire CD(413) 443-6867.

- ✓ Provide information to hobby farmers on Best Management Practices. Distribute or refer land owners to DEP and DFA fact sheets available on the web site http://www.state.ma.us/dep/brp/dws/protect.htm.

7. Presence of Aquatic mammals in Surface Water Watershed – There is past history of aquatic mammals (beavers and muskrats) living in and near Long Pond but the water supplier inspects the reservoir. Aquatic mammals pose a potential threat of microbial contamination of the source from *Giardia Lamblia* and *Cryptosporidium*, pathogens that are identified in the Surface Water Treatment Rule and Enhanced Surface Water Treatment Rule as posing an unacceptable risk to drinking water.

Presence of Beavers in Surface Water Sources Recommendations:

- ✓ Monitor the watershed and reservoirs for the presence of aquatic mammals and their proximity to the intake. Monitor raw water quality and assess potential impacts.

For More Information

Contact Catherine V. Skiba in DEP's Springfield Regional Office at (413) 755-2119 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier and local town boards.

Other land uses and activities within the watershed that are potential sources of contamination are included in Table 2. Identifying potential sources of contamination is an important initial step in protecting your drinking water sources. Further local investigation will provide more in-depth information and may identify new land uses and activities that are potential sources of contamination. Once potential sources of contamination are identified, specific recommendations like those below should be used to better protect your water supply.

Section 3: Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:

As with many water supply protection areas, the system's watershed contains a few potential sources of contamination. However, source protection measures reduce the risk of actual contamination, as illustrated in Figure 2. The water supplier is commended for taking an active role in promoting source protection measures in the Water Supply Protection Areas through:

- Communication with abutting property owners
- Vigilant inspection and monitoring of activities in the watershed.

Source Protection Recommendations:

To better protect the sources for the future:

- ✓ Continue inspecting the protection areas regularly, and when feasible, remove any non-water supply activities.
- ✓ Educate residents and the conservation group on ways they can help you to protect drinking water sources.
- ✓ Work with emergency response teams to ensure that they are aware of the stormwater drainage in your watershed and to cooperate on responding to spills or accidents.
- ✓ Work with landowners in your protection areas to make them aware of your water supply and to encourage the use of a best management practices for residential and recreational uses.
- ✓ Develop and implement a Forest Management Plan for water supply protection.

Conclusions:

These recommendations are only part of your ongoing local drinking water source protection. Additional source protection recommendations are listed in Table 3, the Key Issues above and Appendix A.

DEP staff, informational documents, and resources are available to help you build on this SWAP report as you continue to improve drinking water protection in your community. The Department's Source Protection Grant Program provides funds to assist public water suppliers in addressing water supply source protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the Grant Program. Please note: each spring, about May 1, the Department posts a new Request for Response (RFR- the grant application form) for the grant program. Other grants and loans are available through the Drinking Water State Revolving Loan Fund, the Clean Water State Revolving Fund, and other sources. For more information on grants and loans, visit the Bureau of Resource Protection's Municipal Services web site at: http://mass.gov/dep/brp/mf/mfpubs.htm.

The assessment and protection recommendations in this SWAP report are provided as a tool to encourage community discussion, support ongoing source protection efforts, and help set local drinking water protection priorities. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures. The water supplier should supplement this SWAP report with local information on potential sources of contamination and land uses. Local information should be maintained and updated periodically to reflect land use changes in the watershed. Use this information to set priorities, target inspections, focus education efforts, and to develop a long-term drinking water source protection plan.

Section 4: Appendices

A. Protection Recommendations
B. Regulated Facilities in the Protection Area
C. Additional Documents on Source Protection

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone A		
Does the Public Water Supplier (PWS) own or control the entire Zone A?	**YES**	Follow Best Management Practices (BMP's) that focus on good housekeeping, spill prevention, and operational practices to reduce the use and release of hazardous materials.
Is the Zone A posted with "Public Drinking Water Supply" Signs?	**YES**	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is the Zone A regularly inspected?	**YES**	Continue daily inspections of drinking water protection areas.
Are water supply-related activities the only activities within the Zone A?	**YES**	Continue monitoring non-water supply activities in Zone As.
Municipal Controls (Zoning By-laws, Health Regulations, and General By-laws)		
Does the municipality have Surface Water Protection Controls that meet 310 CMR 22.20C?	**YES**	The Town Watershed Protection by-law is in compliance DEP's regulations. Refer to www.state.ma.us/dep/brp/dws/ for model by-laws, health regulations, and current regulations.
Do neighboring communities protect the water supply protection areas extending into their communities?	**NO**	Work with neighboring municipalities to include the watershed in their protection controls.
Planning		
Does the PWS have a local surface water supply protection plan?	**NO**	Develop a surface water supply protection plan. Follow "Developing a Local Surface Water Supply Protection Plan" available at: www.state.ma.us/dep/brp/dws/.
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	**YES**	Water Company has sent a copy of their Emergency Response Plan to the local ER team. Update plan as necessary to support joint emergency response with fire department, Board of Health (BOH), DPW, and local and state emergency officials.
Does the municipality have a watershed protection committee?	**NO**	Work with planners and other water suppliers to establish committee; include representatives from citizens' groups, neighboring communities, and the business community.
Does the Board of Health conduct inspections of commercial and industrial activities?	**PARTIAL**	For more guidance see "Hazardous Materials Management: A Community's Guide" at www.state.ma.us/dep/brp/dws/files/hazmat.doc. Request the BOH adopt floor drain and hazardous materials handling regulations and conduct inspections.
Does the PWS provide watershed protection education?	**YES**	Aim additional efforts at commercial, industrial and municipal uses within the watershed.